AMENDMENTS TO THE CLAIMS

Kindly amend the claims as follows:

1. (original) A method for measuring a rotating angle by an optical encoder assembly comprising a rotating optical disk with a pattern of transparent and absorbent sections, a patterned mirror and one or more optical guide means, wherein an optical beam emitted from a light source is distributed over a substantial part of the said rotating optical disk by the said optical guide means, light rays of the said optical beam are propagated through the transparent sections of the said optical disk to become incident upon the said mirror, and the amount of light reflected by the said mirror and propagated backwards through the said rotating optical disk into the said optical guide is measured, whereby a signal is created depending on the rotation angle and indicating the said rotation angle.

2. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 1 wherein the said pattern of transparent and absorbent sections is a circular pattern and the said optical guide means is a cylindrical optical guide with a transparent peripheral wall that is optically designed to confine the light rays within itself such that the said optical beam travels through the said peripheral wall to be emitted from the said cylindrical optical guide through a terminal peripheral rim at the end of the said transparent peripheral wall and distributed over the circumference of the said optical disk as a circle of light that overlies the said circular pattern.

3. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 1 comprising a first cylindrical optical guide that is installed within the hollow inner space of a second cylindrical optical guide such that the said first and second cylindrical optical guides have a common symmetry axis and each of the said cylindrical optical guides has a

peripheral wall that is optically designed to confine the light rays within itself such that a pair of optical beams emitted from a light source travel through the peripheral walls of the said first and second optical guides respectively to be emitted from the said cylindrical optical guides through their respective terminal peripheral rims and distributed over the circumference of the said rotating optical disk whereby two concentric circles of light are incident on two concentric patterns of absorbent and transparent sections provided on the said rotating optical disk, light rays from the said concentric circles of light are propagated through the said transparent sections of the said optical disk to become incident upon the said mirror, and the amount of light reflected by the said mirror and propagated backwards through the said rotating optical disk into each of the said optical guides is measured, whereby a signal is created depending on the rotation angle and indicating the said rotation angle as well as the direction of rotation.

4. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 1 wherein the said pattern consists of reflective and absorbent sections and only the rays of light incident on the said reflective sections are returned to the optical guide means such that the amount of light output by the said optical guide means depends on the relative positions of the rotating optical disk and the static optical mirror.

5. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 1 wherein the said pattern is a circular pattern of reflective and absorbent sections that is disposed at the same radial position as the radial position of the circular pattern of transparent and absorbent sections on the optical disk whereby only the rays of light incident on the said reflective sections are returned to the optical guide means such that the amount of light output by the said optical guide means depends on

the relative angular positions of the rotating optical disk and the static optical mirror.

6. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 3 wherein the said mirror has two concentric circular patterns of reflective and absorbent sections, the said concentric circular patterns being disposed on the said mirror at the same radial positions as the radial positions of the two concentric circular patterns of transparent and absorbent sections on the optical disk, whereby only the rays of light incident on the said reflective sections are returned to the said first and second optical guide means such that the amount of light output by each of the said optical guide means depends on the relative angular positions of the rotating optical disk and the static optical mirror.

7. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 3 wherein the light beams emerging from the said cylindrical optical guides are first propagated through a static optical disk that is disposed between the said cylindrical optical guides and the said rotating optical disk and then through the said rotating optical disk and a plain mirror is used to reflect the incident rays of light backwards to the said cylindrical optical guides.

8. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 3 wherein the light beams emerging from the said cylindrical optical guides are first propagated through a static optical disk and then through the said rotating optical disk and the said rotating optical disk is attached to the surface of a plain mirror that reflects the incident rays of light backwards to the said cylindrical optical guides.

9. (original) A method for measuring a rotating angle by an optical encoder assembly according to claim 1 wherein a bundle of optical fibers is used

such that one optical fiber emits light into the optical guide means and other optical fibers collect light the said optical guide means.

10. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft, comprising the following elements having a common symmetry axis:

    a. a rotary shaft

    b. a rotating optical disk centrally attached to the said rotary shaft and perpendicularly inclined relative to the said rotary shaft, the said rotating optical disk having a pattern of alternating light absorbing and transparent surfaces;

    c. an optical guide means facing a front side of the said rotating optical disk for emitting light rays in the direction of the said optical disk and receiving light rays from the direction of the said optical disk;

    d. and a mirror disposed behind the said optical disk distally to the said optical guide means and inclined in parallel to the said rotating optical disk such that a reflective face of the said mirror is facing a back side of the said rotating optical disk.

11. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said optical encoder assembly further comprises an optical fiber entering the said optical guide means at a light entrance surface for leading light beams emitted from a light source into the said optical guide and leading light beams output by the said optical guide out of the said optical guide to an electronic surface, the middle line of the said optical fiber being aligned with the said symmetry axis at the said light entrance surface.

12. (previously presented) An optical encoder for indicating the angular position of a rotary shaft according to claim 10 wherein the said pattern of

transparent and absorbent sections on the said rotating optical disk is a circular pattern and the said optical guide means is a cylindrical optical guide with a terminal peripheral rim.

13. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said optical encoder comprises a bundle of optical fibers.

14. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said pattern of transparent and absorbent sections on the said rotating optical disk consists of two concentric circles of alternating absorbent and transparent sections, and the said optical encoder assembly comprises a first cylindrical optical guide that is installed within the hollow inner space of a second cylindrical optical guide such that the said first and second cylindrical optical guides have a common symmetry axis and each of the said cylindrical optical guides has a peripheral wall that ends in a terminal peripheral rim facing the said rotating optical disk.

15. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said mirror is a static mirror with a pattern of reflective and absorbent sections.

16. (original) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said mirror has a circular pattern of reflective and absorbent sections that is disposed at the same geometrical position as the circular pattern of transparent and absorbent sections on the optical disk.

17. (original) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said mirror has two concentric circular patterns of reflective and absorbent sections, the said

concentric circular patterns being disposed at the same geometrical positions as the two concentric circular patterns of transparent and absorbent sections on the optical disk.

18. (original) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said mirror has a retro-reflective surface.

19. (original) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein on the back surface of the said disk a retro-reflective surface consisting of two annular V shaped protrusions extending around the circumference of the said disk is provided.

20. (currently amended) An optical encoder assembly for measuring a rotating angle according to claim 10 wherein a <u>patterned</u> static optical disk is disposed between the said cylindrical optical guides and the said rotating optical disk and a plain mirror is used to reflect the incident rays of light backwards to the said cylindrical optical guides.

21. (currently amended) An optical encoder assembly according to claim [[18]] <u>20</u> wherein one or more light sources are positioned behind the said rotating optical disk and the said patterned static optical disk and light passes through the COGs from the direction of the said rotating optical disk and the said patterned static optical disk to the said light entrance surfaces of the said COGs.

22. (original) An optical encoder assembly for measuring a rotating angle according to claim 20 wherein the said rotating optical disk is attached to the surface of the said plain mirror that reflects the incident rays of light backwards to the said cylindrical optical guides.

23. (canceled)

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (canceled)

29. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 11 wherein the said mirror is a static mirror with a pattern of reflective and absorbent sections.

30. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 12 wherein the said mirror is a static mirror with a pattern of reflective and absorbent sections.

31. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 13 wherein the said mirror is a static mirror with a pattern of reflective and absorbent sections.

32. (previously presented) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 14 wherein the said mirror is a static mirror with a pattern of reflective and absorbent sections.

33. (new) A method for measuring a rotating angle by an optical encoder assembly according to claim 1 wherein light from the said light source is emitted into the optical guide means by an optical fiber and the light propagated backwards into the said optical guide means is collected by further optical fibers and the said optical fibers are arranged in a bundle of optical fibers.

34. (new) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 10 wherein the said optical guide means is a cylindrical optical guide with a transparent peripheral wall that is optically designed to confine the light rays within itself, the said transparent peripheral wall terminating in a terminal peripheral rim of circular form that is facing a front side of the said rotating optical disk so as to emit a circle of light onto the said circular pattern said front side of the said optical disk .

35. (new) An optical encoder assembly for measuring a rotating angle according to claim 10 wherein the said optical guide means has a terminal peripheral rim facing the said optical disk and on the terminal peripheral rim alternating emitting/receiving and non – emitting/receiving sections are provided.

36. (new) An optical encoder assembly according to claim 35 wherein the said emitting/receiving sections are sections with a straight perimeter whereas the non – emitting/receiving sections have a perimeter that is inclined at a suitable angle that causes reflection of light rays passing through the said perimeter.

37. (new) An optical encoder assembly for indicating the angular position of a rotary shaft according to claim 34 wherein the said optical encoder assembly further comprises an optical fiber entering the said optical guide means at a light entrance surface for leading light beams emitted from a light source into the said optical guide and leading light beams output by the said optical guide out of the said optical guide to an electronic surface, the middle line of the said optical fiber being aligned with the said symmetry axis at the said light entrance surface.